

We claim:

1. A nucleic acid vector for the expression of at least two cistrons comprising:
  - a. a promoter operably linked to a nucleotide sequence comprising at least two cistrons; and
  - b. at least one nucleotide sequence comprising an IRES selected from EV71, HCV, or EMCV, or a variant or fragment thereof, operably linked to at least one of said at least two cistrons, wherein said nucleotide sequence, or variant or fragment thereof, provides IRES activity.
2. The nucleic acid vector of claim 1, wherein at least one of said at least two cistrons comprises a reporter gene.
3. The nucleic acid vector of claim 1, wherein at least one of said at least two cistrons comprises a therapeutic gene.
4. A biological vector capable of expressing at least two cistrons comprising the nucleic acid vector of claim 1.
5. The biological vector of claim 4, wherein said biological vector is selected from poxvirus, adenovirus, herpesvirus, adeno-associated virus, retrovirus, and baculovirus.
6. A nucleic acid vector for the expression of at least two cistrons comprising:
  - a. a promoter operably linked to a nucleotide sequence comprising at least two cistrons; and

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- b. at least one nucleotide sequence comprising a homolog of an IRES selected from EV71, HCV, or EMCV, or a variant or fragment thereof, operably linked to at least one of said two cistrons, wherein said homolog, or a variant or fragment thereof, provides IRES activity.
7. The nucleic acid vector of claim 6, wherein at least one of said at least two cistrons comprises a reporter gene.
8. The nucleic acid vector of claim 6, wherein at least one of said at least two cistrons comprises a therapeutic gene.
9. A biological vector capable of expressing said at least two cistrons comprising the nucleic acid vector of claim 6.
10. The biological vector of claim 9, wherein said biological vector is selected from poxvirus, adenovirus, herpesvirus, adeno-associated virus, retrovirus, and baculovirus.
11. A host cell comprising the nucleic acid vector of claim 1.
12. The host cell of claim 11, wherein said host cell is an insect cell.
13. The host cell of claim 11, wherein said host cell is a mammalian cell.
14. The host cell of claim 11, wherein said host cell is a bacterial cell.
15. A host cell comprising the nucleic acid vector of claim 6.
16. The host cell of claim 15, wherein said host cell is an insect cell.

17. The host cell of claim 15, wherein said host cell is a mammalian cell.
18. The host cell of claim 15, wherein said host cell is a bacterial cell.
19. A method for expressing at least two cistrons comprising: introducing into a host cell: a nucleic acid vector comprising
- a. a promoter operably linked to a nucleotide sequence comprising at least two cistrons; and
  - b. at least one nucleotide sequence comprising an IRES selected from EV71, HCV, or EMCV, or a variant or fragment thereof operably linked to at least one of said at least two cistrons, wherein said nucleotide sequence, or variant or fragment thereof, provides IRES activity.
20. A method for expressing at least two cistrons comprising: introducing into a host cell: a nucleic acid vector comprising
- a. a promoter operably linked to a nucleotide sequence comprising at least two cistrons; and
  - b. at least one nucleotide sequence comprising a homolog of an IRES selected from EV71, HCV, or EMCV, or a variant or fragment thereof operably linked to at least one of said two cistrons, wherein said homolog, or variant or fragment thereof provides IRES activity.
21. A baculovirus transfer vector for the expression of at least two cistrons comprising:

- a. a baculovirus promoter operably linked to a nucleotide sequence comprising at least two cistrons; and
  - b. at least one nucleotide sequence comprising an IRES selected from EV71, HCV, or EMCV, or a variant or fragment thereof, operably linked to at least one of said at least two cistrons, wherein said nucleotide sequence, or variant or fragment thereof provides IRES activity.
22. The baculovirus transfer vector of claim 21, wherein at least one of at least two cistrons comprises a reporter gene.
23. The baculovirus transfer vector of claim 21, wherein at least one of at least two cistrons comprises a therapeutic gene.
24. A recombinant baculovirus capable of expressing at least two cistrons in a host cell comprising a baculovirus genome comprising:
- a. a baculovirus promoter operably linked to a nucleotide sequence comprising at least two cistrons; and
  - b. at least one nucleotide sequence comprising an IRES selected from EV71, HCV, or EMCV, or a variant or fragment thereof operably linked to at least one of said at least two cistrons, wherein said nucleotide sequence, or variant or fragment thereof, provides IRES activity.
25. A method for producing a recombinant baculovirus capable of expressing at least two cistrons comprising:

- a. introducing a baculovirus transfer vector of claim 21 and a baculovirus genomic DNA into a baculovirus host cell so as to effect homologous recombination; and
  - b. isolating a recombinant baculovirus.
26. A baculovirus host cell expressing at least two cistrons comprising the recombinant baculovirus of claim 24.
27. A baculovirus transfer vector for the expression of at least two cistrons comprising:
- a. a baculovirus promoter operably linked to a nucleotide sequence comprising at least two cistrons; and
  - b. at least one nucleotide sequence comprising a homolog of an IRES selected from EV71, HCV, or EMCV, or a variant or fragment thereof, operably linked to at least one of said at least two cistrons, wherein said nucleotide sequence, or variant or fragment thereof provides IRES activity.
28. The baculovirus transfer vector of claim 27, wherein at least one of at least two cistrons comprises a reporter gene.
29. The baculovirus transfer vector of claim 27, wherein at least one of at least two cistrons comprises a therapeutic gene.
30. A recombinant baculovirus capable of expressing at least two cistrons in a host cell comprising a baculovirus genome comprising:
- a. a baculovirus promoter operably linked to a nucleotide sequence comprising at least two cistrons; and

- b. at least one nucleotide sequence comprising a homolog or an IRES selected from EV71, HCV, or EMCV, or a variant or fragment thereof operably linked to at least one of said at least two cistrons, wherein said nucleotide sequence, or variant or fragment thereof, provides IRES activity.
- 31. A method for producing a recombinant baculovirus capable of expressing at least two cistrons comprising:
  - a. introducing a baculovirus transfer vector of claim 27 and a baculovirus genomic DNA into a baculovirus host cell so as to effect homologous recombination; and
  - b. isolating a recombinant baculovirus.
- 32. A baculovirus host cell expressing at least two cistrons comprising the recombinant baculovirus of claim 30.
- 33. A kit for recombinant protein expression in bacteria, insect, and/or mammalian cells comprising at least one nucleic acid vector comprising at least one IRES sequence functional in a bacterial cell, at least one nucleic acid vector comprising at least one IRES sequence functional in a insect cell, and at least one nucleic acid vector comprising at least one IRES sequence functional in a mammalian cell.
- 34. The kit of claim 33, wherein said at least one nucleic acid vector comprises at least one IRES sequence selected from EV71, HCV, or EMCV.

35. The kit of claim 33, wherein the kit comprises a single nucleic acid vector comprising at least one IRES sequence functional in a bacteria, insect, and mammalian cell.
36. The kit of claim 33, wherein the kit comprises two nucleic acid vectors wherein said two nucleic acid vectors each comprise at least one IRES sequence functional in bacteria, insect, and/or mammalian cells.
37. A method of treating a patient comprising administering the nucleic acid vector of claim 1 or 6.
38. A method of treating a patient comprising administering the biological vector of claim 4 or 9.
39. A method of treating a patient comprising:
- a. excising a cell or tissue from said patient;
  - b. introducing the nucleic acid vector of claim 1 or 6 into said excised cell or tissue;
  - and
  - c. reimplanting said cell or tissue into said patient.
40. A method of treating a patient comprising:
- a. excising a cell or tissue from said patient;
  - b. introducing the biological vector of claim 4 or 9 into said excised cell or tissue;
  - and

c. reimplanting said cell or tissue into said patient.

41. A method for screening for an anti-viral compound capable of interfering with cap-independent translation from an IRES selected from EV71, HCV, or EMCV comprising:

a. transfecting into a cell the nucleic acid vector of claim 1 or 6;

b. contacting said transfected cell with a test compound; and

c. detecting a decrease in recombinant protein production compared to a transfected cell without the test compound.

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